KIOTI REGENERATION PROCESS

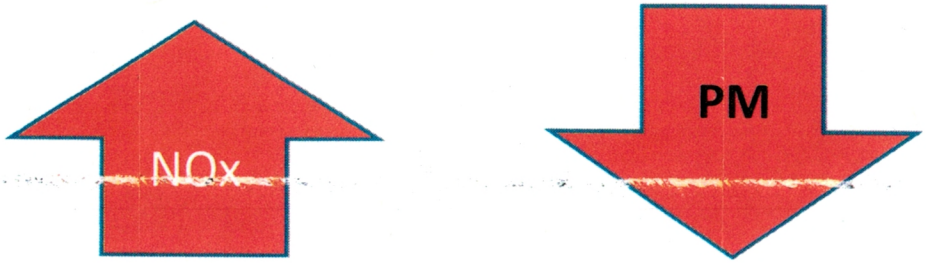
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Emissions Reaction to Combustion Temperature

- Low Combustion Temperature



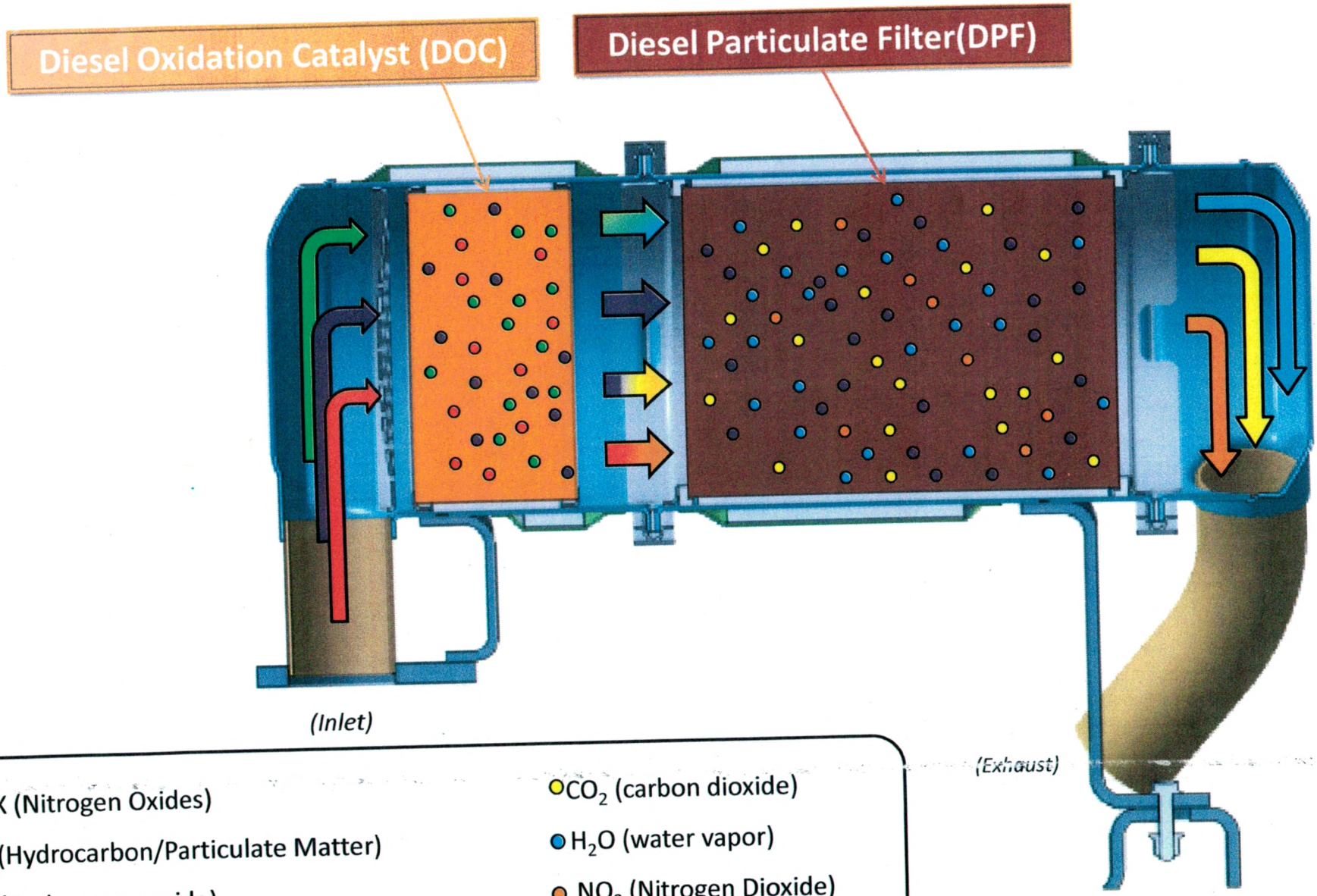
- High Combustion Temperature



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IV. KIOTI TIER IV
ENGINE (ABOVE 25HP) REGENERATION

The Power to Transform
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- NOX (Nitrogen Oxides)
- HC (Hydrocarbon/Particulate Matter)
- CO (Carbon monoxide)
- CO_2 (carbon dioxide)
- H_2O (water vapor)
- NO_2 (Nitrogen Dioxide)

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IV. KIOTI TIER IV

ENGINE (ABOVE 25HP) REGENERATION

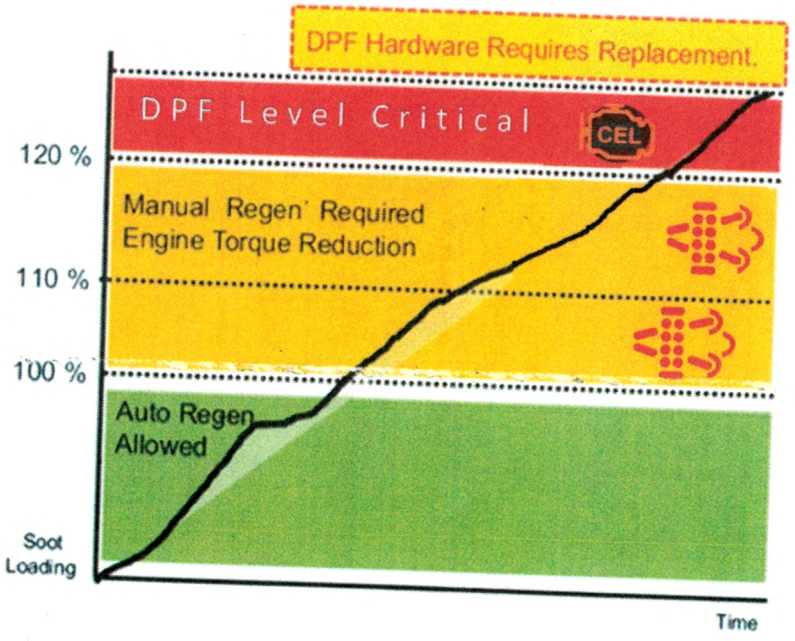
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*What is **PM** (particulate matter)? –*
Soot or particulate material is the result of incomplete combustion of hydrocarbons -HC

Why is particulate matter so important?–
The amount of PM caught in the DPF is what determines if a regen is necessary.

Level	Percentage %	Regeneration Type Available	Torque reduction (%)
3	120 and above	None	50
2	110-119	Manual	30
1	100-109	Manual	30
	80-99	Auto/Manual	0



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IV. KIOTI TIER IV

ENGINE (ABOVE 25HP) REGENERATION

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Passive regeneration:

-Particulate material is burnt **NATURALLY** when the exhaust gas temperature is high. Through every day use, high RPM or work load the exhaust gas temperature (EGT) are hot enough to burn particulate matter. *Example: Running the tractor at or above PTO speed*

Active regeneration:

Automatic Regeneration

-ECU initiates regen when conditions are desirable.
**RPM above 1600, Diesel Oxidation Catalyst (DOC) above 480°F*

Manual Regeneration

-Operator initiated regen when DPF warning lamp is illuminated
**can be initiated at any time regardless if DPF light is on or not.*



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IV. KIOTI TIER IV

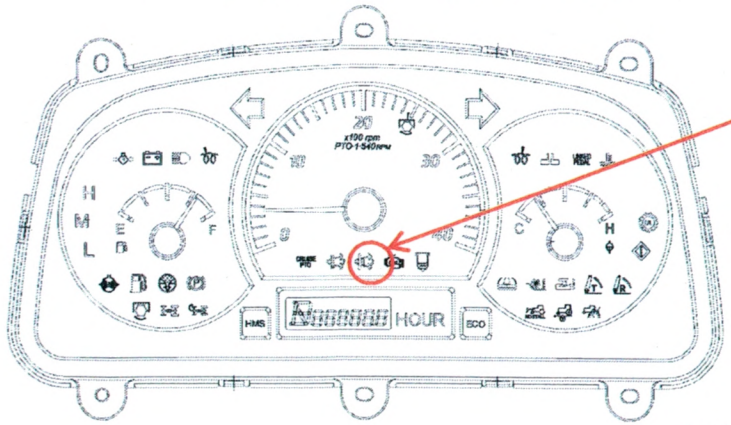
ENGINE (ABOVE 25HP) REGENERATION

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2015 KIOTI TRACTOR DEALER MEETING

Key Points for Automatic Regen:

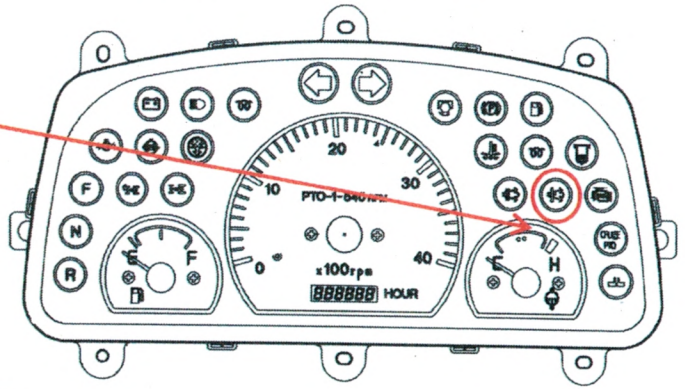
- Soot levels to be between 80% - 100%
- Once CCRT temperature reaches 250°C (480°F) regen will begin
- RPM at or above 1,600; if RPMs drop below 1,600 regen process will be cancelled
- ECU will command post injection to increase CCRT temperature to 600°C (1100°F)
- Automatic regen will occur about every 40 running hours, but also depends on the working conditions
- Automatic regen last approximately 20 minutes
- Regen underway lamp will be lit during the process
- Do not shut engine off until "regen underway lamp" is off

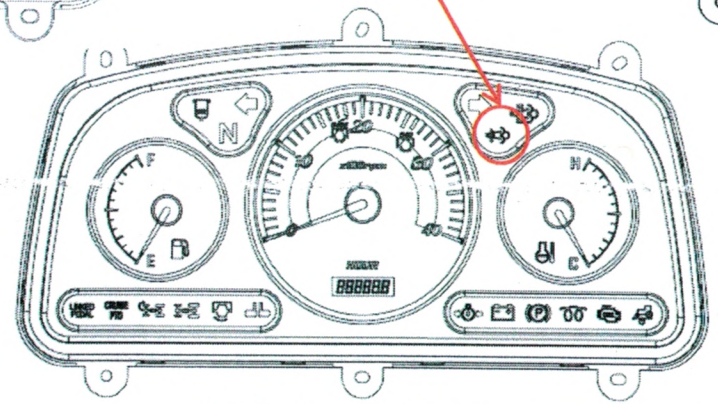
NX series – 45/50/55/6010





RX series – 6620/7320





CK/DK – '10 series

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IV. KIOTI TIER IV

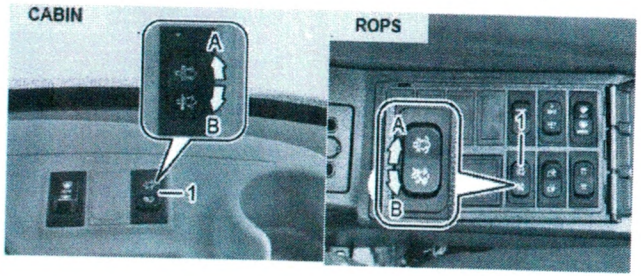
ENGINE (ABOVE 25HP) REGENERATION

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Key points for Manual Regen:

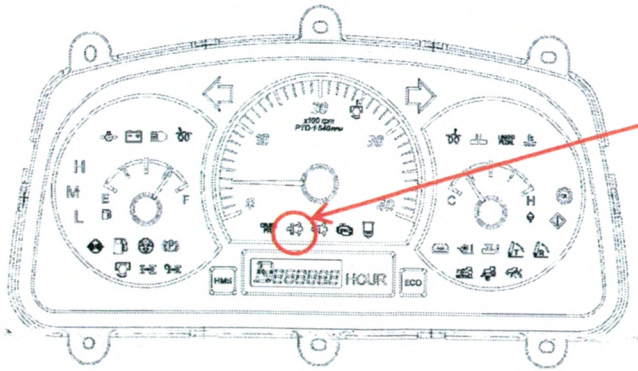
Perform the following procedure when the regeneration warning lamp comes on:

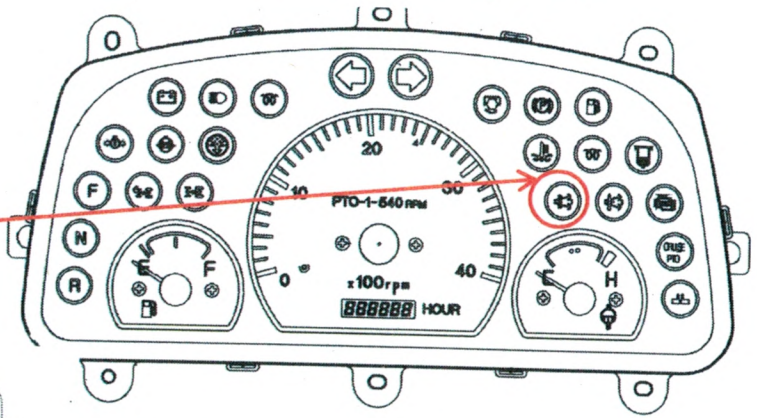
- Park the tractor on level ground, open surroundings, and well ventilated
- Start the engine and run at idle speed for 3 to 4 minutes; coolant temp needs to be 20°C (68°F) or higher
- Press and lock the parking brake
- Do not depress the clutch pedal (NX HST: Place range lever in "N")
- Press regeneration button (A) and hold for 2 seconds
- The regen underway lamp blinks after the regen warning lamp turns off
- Regen will last approximately 40 minutes and will be in 3 stages:
 1. Warm up mode; 12 minutes at 1,500 rpm
 2. Regen mode; 25 minutes at 2,600 rpm
 3. Cool down mode; 3 minutes at 1,600 rpm



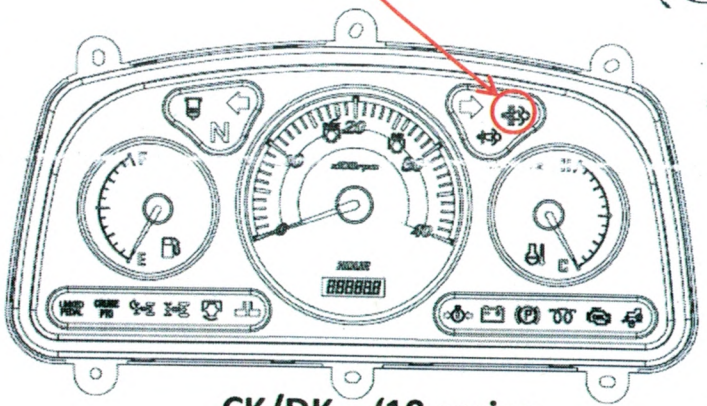
RX series – 6620/7320

NX series – 45/50/55/6010





Regen Warning Lamp



CK/DK – '10 series

*** Light will be amber in color on RX models only**

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